DOCUMENT RESUME

ED 282 603 JC 870 255

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TITLE "Service Wars": The Race To Be the Best in Product Service.
PUB DATE Apr 87
NOTE 5p.; Paper presented at the Annual National Convention of the American Association of Community and Junior Colleges (67th, Dallas, TX, April 22-25, 1987).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Community Colleges; *Cooperative Programs; Experiential Learning; *Job Training; *Labor Force Development; Program Descriptions; *School Business Relationship; *Technical Education; Technological Advancement; Two Year Colleges
IDENTIFIERS *Automobile Industry; *Macomb Community College MI

ABSTRACT

To meet the price and quality challenges of foreign manufacturers, U.S. industry has had to invest heavily in technology, incorporating it extensively into both the manufacturing process and product. This trend, termed the "New Industrial Revolution" has created a new challenge--educating technicians to service these highly technical, micro-electronic, and computer-controlled products. One model for meeting this challenge is being piloted by Chrysler Corporation at Macomb Community College (MCC) in Michigan to address the critical needs of Chrysler dealers for highly skilled automotive service technicians. The 4-year Chrysler Dealer Apprentice Program (CAP) has the following unique features: (1) both MCC and Chrysler participate in recruitment and student selection; (2) during the first 2 years of the program, the student goes to school for 2 months studying subjects specific to Chrysler's systems and basic automotive theory and practice, then goes to work at the dealership for the next 2 months to work under the guidance of an experienced technician on those systems studied in school; (3) the technician is paid a stipend to check the student's work, the student is paid as a part-time employee of the dealership; (4) after graduation, the student becomes a full-time employee of the dealership for 2 years; (5) CAP operates through a signed contract between the student and the sponsoring dealer; (6) Chrysler and MCC are working together to redefine the content of a number of liberal arts associate degree requirements to make the courses more relevant to the automotive student; and (7) all participants in the program--Chrysler, MCC, the dealership, and the student--make specific contributions and commitments to the program. (PAA)

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"Service Wars": The Race to Be the Best in Product Service

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April, 1987

JC 870 255

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"We are living in the fastest changing economy in the history of the world. The industrial revolution pales by comparison with what is happening in the United States. It has forced us to rethink what we are, what we are about, and how we are going to prepare for that change. The most important element of that preparation is in the field of education. We really are at risk, not just educationally, but societally, unless we change—and change very dramatically."

—WILLIAM E. BROCK
Secretary of Labor

The efforts of American industry to meet the price and quality challenges of foreign manufacturers has been called the New Industrial Revolution. This challenge was met through heavy investment in technology, incorporating it extensively into both the manufacturing process and the product itself. While this strategy has favorably impacted the price and quality of American goods, this New Industrial Revolution has created a new challenge—educating technicians to service these highly technical, micro-electronic, and computer-controlled products.

Partnerships between industry and education offer a dramatic change in the traditional concept of preparing workers to fill these emerging training needs.

In years past, a handy householder could fix nearly any appliance at the kitchen table, and the neighborhood "shade tree" mechanic could make any car run like a dream. That product simplicity also allowed manufacturers to easily recruit and train a service staff. New technology, however, has changed all of this, and the result is that the consumer must now rely more heavily on the manufacturer or the dealer when something goes wrong. Unfortunately, service personnel have had a difficult time keeping up with the technology being built in at the factory, and service costs or service delays are being blamed for the loss of repeat business.

This phenomenon poses a new threat to American industrialists, so much so that some are now predicting that product service—the ability to have a product repaired quickly, correctly, and at a reasonable cost—will become the key to sales success in the decade ahead. Just as the quest for quality has typified the 1980's, some industry specialists are predicting that "Service Wars" will be the hallmark of the 1990's.

While these predictions signify many new challenges for American business, they also hold the prospect of many opportunities for new partnerships between industry and education. In many cases, traditional relationships will need to be expanded and redefined, and new models will have to be established.

One such model is already being crafted by Chrysler Corporation as it strives to address the critical needs of their dealers for highly skilled automotive service technicians. The model, now being piloted at Macomb Community College in Warren, Michigan, contains a number of features which set new standards for the industry.

This article will briefly review the historical background shaping buying decisions for durable goods and explain why product service is now becoming the key to customer satisfaction. It will then describe the "Chrysler Dealer Apprentice Program" and use it to illustrate many of the new approaches being established to address product service requirements of American manufacturers. Special attention will be given to identify those elements which set this model apart from more traditional industry/education partnerships.

New Dimensions in Customer Satisfaction

The period beginning after World War II and lasting until the early 1970's saw a rise in the affluence of the average American. Much of what was purchased by the American consumer during this period was based on want rather than need. The choice of manufacturer was frequently based on family tradition. For example, if the parents had purchased most of their small kitchen appliances from West Bend, the children, when they became consumers of similar items, would also buy West Bend.

At the same time, manufacturing itself became richer. Although there was very little competition from outside this country, the level of competition between American manufacturers was very high. Industrialists knew that the consumer would continue to buy for three principal reasons: brand name established through marketing, tradition based on family preference, and product change resulting from research and development funds not available to smaller foreign competitors.

Along with the oil crisis of the early 70's came a manufacturing crisis as well. The cost of manufacturing soared due to an increase in the cost of fuel. The result was an increase in the price of durable goods to the customer and a drop in profits to the manufacturer. This situation put American industry in direct competition with foreign nations that manufactured fewer products, and paid a much lower labor rate to their workers. The governments of these other nations would often subsidize their manufacturers, which allowed them to operate at a lower profit margin based on volume sales as opposed to unit sales.

American consumers, faced with higher prices for American made goods and less discretionary personal capital, began to make a change in traditional buying habits. Durable goods purchases could now be price compared. Because the foreign nations manufactured at much lower cost, their products sold for less. The American consumer now had a choice.

During the mid and late 70's, as American industry regrouped and applied itself to lowering its cost through the development of higher technology manufacturing processes, the foreign nations concentrated on refining their manufacturing processes to produce higher quality goods. The American consumer now had two choices: price and quality. During this time, foreign manufacturers made huge inroads into the once captive American market. These inroads were not only made into the market of small durable goods but into textiles, steel, electronics, and transportation as well.

Although American industry was "up against it," it did not falter. During the early and mid-80's, it lowered its cost of manufacturing, regained its competitive edge, and through its unique ability to thrive in an adverse environment, once again took and held the dominant market share in nearly all areas. However, during this time many American consumers had formed loyalties to the products of foreign manufacturers that were as strong as those once held for American industry.

Today's situation is one in which manufacturers of durable goods from all over the world are in a head-to-head battle in the areas of price, quality and technology. The bottom line, however, is still drawn on customer retention and conquest. Every manufacturer is driven to keep its own customers and take them from the others. More simply stated, the thrust of industry through the rest of this century and into the next will be toward customer satisfaction. In light of the now relative equality of world manufacturing in the areas of price, quality, and technology, the front on which the battle to best satisfy customers will be fought is service. In no other area of manufacturing will these "Service Wars" be fought as vigorously as in the automobile industry.

American automobile manufacturers have realized the needs of the future, and each has established numerous programs to increase its ability to service what it sells. The majority of these programs are designed to operate within the dealerships to produce a future supply of high caliber technicians, and many are set up in cooperation with local community colleges.

Different Requirements Mean Different Responses

Vocational education has sometimes been considered the "stepchild" of American education. However, with the prospect of this country's move toward a service-based economy, community colleges and vocational schools are gaining greater significance within the educational system. In the past, some vocational programs were seen simply as academic alternatives, and were often conceived without much involvement with industry. As a result, they were producing graduates with skills that did not meet the real needs of employers.

Education has also been very conservative with its dollars. To teach the advanced technologies requires a high dollar investment and, thereby, risk. A new, almost entrepreneurial, attitude is needed. One of the colleges that has this attitude is Macomb Community college of Warren, Michigan.

Macomb has a few things working in its favor. First of all, it is located in a suburb very close to the city of Detroit. This is important because it provides Macomb close proximity to one of the largest manufacturing, sales, and service economies in the world. From this position Macomb has been able to engage in a wide variety of industry-related training, thereby gaining knowledge of industry's needs.

Secondly, Macomb has been careful in putting together the type of educational staff that

is eager to remain current. The teaching faculty is updated constantly, according to an organized plan. The guidance staff meets with the teaching faculty to find new ways to help the students attain their chosen goals. The Financial Aid Department works closely within programs to tailor its capabilities to the students' needs.

Finally, during the past few years, the administrative staff at Macomb has worked to foster the entrepreneurial attitudes and skills needed to build and maintain a lasting relationship with industry. This has become evident in the collaboration between Chrysler Corporation and Macomb Community College in the national piloting of the Chrysler Dealer Apprenticeship Program.

The Chrysler Dealer Apprenticeship Program (CAP) is designed to function as a "feeder system" of caliber automotive repair technicians to be placed in the service departments of Chrysler's dealer body. Chrysler's intent is that the graduates of the CAP will be its firing line offense for the "Service Wars" of the 1990's and the twenty-first century. Although the basic structure of the CAP is similar to programs offered by other manufacturers, there are features inherent in its design that set it apart.

Unique Features of the CAP Program

CAP is a four-year program. The first two years of the program are based on education. The second two years are based on experience. There are four principal participants: Chrysler, the college at which the CAP is sited, the apprentice technician, and the Chrysler dealer. Each has a commitment through vested interest in the program.

During the first two years of the program, the student alternately goes to school for two months, then to work at the dealership for a like period. While at school, the student studies specific subjects centered around Chrysler's systems and basic automotive theory and practice. When the student goes to the dealership for the internship, he/she works under the guidance of an experienced technician, but only on those systems which the student has just studied in school. The technician is paid a stipend to check the student's work, and the student is paid as a part-time employee of the dealership. There are normally three blocks of study and three internships during each of the first two years.

After the student graduates, he/she becomes a full-time employee of the dealership for two years. At the end of the two years following graduation, the student is paid a bonus.

Shared Role in Recruitment and Selection

Both Chrysler and the school participate in the recruiting and selection of candidates for the CAP. The school recruits through its normal channels, but specifically for the program. Chrysler places advertisements in the appropriate newspapers and makes direct letter mailings to all of the participants in the Plymouth Troubleshooting Contest that live within a specified radius from the school.

The selection process employed by the CAP is the only one of its kind in the industry. After the recruiting phase is completed, all of the prospective candidates are given any required college entrance exams and assessment tests. Students who pass the exams and demonstrate a tenth-grade reading ability and a ninth-grade math capability are eligible to continue in the selection process. Those who pass the exam, but do not attain the levels required, are encouraged to join the standard automotive program at the college or to upgrade skills in the needed areas and try again.

Those candidates continuing in the selection process are next given tests in the areas of logic, mechanical aptitude, and spacial relations. The highest- scoring group (usually 50 to 70) is then interviewed by the college CAP coordinator, a representative from Chrysler, and the guidance counselor for the CAP. These interviews are done to determine whether or not the candidate has reasonable expectations of the program, why the candidate chose the CAP for beginning a career, and if the candidate understands the ramifications of signing a contract. The candidates are then rated by this same group. The overall rating is based on their scores on the various exams, their backgrounds in experience and education, and the answers to questions posed during the interviews. The remaining group (usually around 40 to 50 candidates) is then sent out to be interviewed by the sponsoring dealers.

Each candidate is given the names, addresses, and phone numbers of several dealers closest to the candidate's residence. They are to make appointments with all of the dealers on their list and to be interviewed by each. Many dealers interview as many as a half dozen candidates before selecting the one(s) they wish to sponsor. There are normally 25 dealers involved in each CAP section. Both the dealer and the candidate must agree to the sponsorship. If either does not want to sign up with the other, they interview with other dealers or candidates. Once a contract is signed, the dealer and the candidate are CAP participants.

Two-Year Program— Four-Year Commitment

The CAP is the only program of its kind that incorporates a signed contract between the student and the sponsoring dealer. This is done to create a vested interest in the success of the program on the part of each.

Basically, the student and the dealer agree to split the program costs. Each pays half. Additionally, the student agrees to work for the dealer for two years after graduation, and the dealer agrees to pay the student a bonus incentive at the end of the four-year period. This bonus is roughly equal to the student's share of tuition.

In the end, the student receives an excellent education designed specifically for a career as an automotive technician, with virtually all educational costs paid by the dealer. The student is also guaranteed a job. The dealer gets a technician that is immediately able to work with the current technology. The technician cannot leave the dealer for two years after graduation, and it costs the dealer less than training the technician in the dealership.

Emphasis on Education vs. Skills Alone

Chrysler believes the type of person that will be required to deal with the technology of the automobile in the future will be well educated with a broad base of knowledge and skills. This person will have skills in critical thinking, inductive and deductive reasoning gained by a quality education, not only in automotive technology but in the liberal arts as well. These are the reasons why Chrysler requires a minimum of a high school diploma for entrance to the program and no less than an associate-level degree for successful completion.

Customizing of Liberal Arts Courses

One of the chief sources of student attrition in any automotive degree program is the liberal arts requirement. There are several reasons for this. Most automotive students prefer to work with their hands on things they can see. Their critical thinking powers are derived primarily from cause-and-effect analysis. They understand systems, but have trouble dealing with concepts. The self image and social status of the automotive student is based on his/her ability to create, diagnose, repair, or otherwise modify automobiles and automotive components or systems. The mentality of the automotive student is "tuned" to the here and now, as opposed to the past or future. As a result, the automotive student often performs poorly in liberal arts courses and, in turn, fails to achieve an associate degree. More importantly, however, is the failure to gain the reasoning and conceptualizing skills provided by these courses— skills that are critical to success as an automotive repair technician.

In an effort to change this trend, Chrysler and the liberal arts teaching staff of Macomb Community College are collaborating to redefine the content in a number of the liberal arts courses required for an associate degree. As the CAP operates on an accelerated schedule, the liberal arts courses taken by the CAP students are also accelerated, and only CAP students are in these classes. This allows the content of the courses to be adjusted without affecting the general liberal arts curriculum offered by the college.

In changing the content of these courses, the academic requirements for each course are carefully maintained. However, the general content of each is modified, where possible, in an effort to make the course more relevant to the automotive student. The math and English content is tailored to the type that would be most used by the prospective automotive technician. Actual problems and reading and writing examples from the automotive repair field are used in these courses. The course content in the humanities area has also been adjusted. Art, architecture, music, social changes, etc., are all taught with emphasis on the automotive industry and the impact the industry has had on those fields. The content of these courses is constantly scrutinized and revised to increase quality

and make them more interesting to the automotive students. It is felt by all concerned that the success of this effort may eventually produce a change in liberal arts courses taught in other vocational programs at the college.

Institution's Dedication of Staff and Facilities

In order to become a CAP site, the school must dedicate specific staff and facilities to the program. Aside from teaching faculty, there must be a guidance counselor assigned specifically to the CAP students. This is done so that all of the students will receive counseling from a person who is cognizant of their unique circumstances. The same is true in the area of financial aid.

The school must provide classroom and shop facilities that are used only by the CAP students when they are in training. Chrysler requires that all CAP students be dealer-sponsored and trained together. No outside students are allowed in the CAP classes. The school must provide adequate, secure storage for the vehicles, hardware, software, and other training materials provided by Chrysler, as well as a coordinator for the program. The designated teaching faculty (full or part-time) must be given released time to be trained by Chrysler.

Chrysler Donations and Training

As with most industry education partnerships, Chrysler donates equipment for the purpose of training. However, Chrysler also donates all of the textbooks, student reference books, and audio and video training materials to be used in the program. These materials are used to educate the students exclusively in Chrysler technology.

Another unique feature of the CAP is the disposition of vehicles. When a CAP is started, Chrysler gives the school eight to ten current-model-year vehicles. In each subsequent year, half that number are donated. In this way, the students are educated with the latest technology, and are more immediately valuable to their sponsoring dealer. When the school receives the second group of vehicles, Chrysler asks that a similar number of vehicles donated the previous year be given to local high schools with automotive programs.

This flow-through donation practice will significantly enhance community college-high school relationships in the automotive area and is designed to be a major stimulus to developing the 2 + 2 Tech Prep/Associate Degree programs being advocated by the American Association of Community and Junior Colleges. If interested high school automotive students fail to gain CAP admission, they will be ideally positioned to mainstream in the college's regular automotive technician training program.

Chrysler provides the CAP coordinator and each of the instructors with schedules of Chrysler's classes in the area. The coordinator then sets up a schedule for each instructor to attend those classes relative to his/her specialization. These classes are provided free of charge to the CAP instructors. They receive the same training as the Chrysler technicians in the dealerships. This, combined with their teaching background, helps the instructors structure their courses around Chrysler's systems and the actual working environment of the dealership technician.

It is important to note that Chrysler and the school mutually agree that the training materials, as well as the instructional staff, are to be updated constantly. This is planned each year. In addition, any new systems that appear during the course of a year are immediately made available to the school for instruction, and a plan to train the instructors in the new systems is formulated.

Future Considerations

The age of advanced technology has placed many burdens on both industry and education. For industry, the greatest burden may well be securing a guaranteed supply of appropriately trained technicians. For education, it most assuredly is the huge cost of keeping high-tech instructors, teaching materials and equipment up to date. The Chrysler Dealer Apprentice Program provides a quid pro quo designed to minimize both encumbrances.

But perhaps the greatest benefit of any such program is the enhancement of dialogue between educators and employers at many different organizational levels. Through these discussions, each becomes better informed about the needs of the other. Likewise, each gains an awareness of opportunities which may otherwise be overlooked. Sadly, though, these conversations often reveal how much is still to be done.

While industry is not without its share of obstacles, it appears that education, especially public institutions, may have the greatest difficulty in implementing new directions. Although recent studies indicate that over three-quarters of the nation's two-year institutions now have industry response capability, customized educational programs still run against the grain of traditional governance practices and professional staff biases. In addition, very few states have adopted ongoing funding mechanisms which recognize the added cost of industry-specific curriculum. Flexibility and responsiveness are being pursued as laudable goals, but when caught in a resource pinch, more traditional elements of the mission statement typically enjoy priority positions.

Programs such as CAP will be helpful in facilitating a more supportive environment. The corporate donations help to offset the added cost of instruction. The preference for the associate degree is appealing to the traditionalists on staff. The enhanced high school relationships resulting from the flow-through donation system will aid recruitment into regular as well as specialized programs and also provides a firm foundation for establishing 2 + 2 Tech Prep/Associate Degree arrangements. Finally, the ability to keep current in a rapidly changing technical field will help to build a reputation for excellence which can act as a springboard to other mutually beneficial relationships.

The rewards for industry should be easier to measure. Clearly, the goal is improved customer satisfaction leading to improved sales and market share through repeat business. That intention may have been best stated years ago by the following anonymously written poem:

*A little bit of **quality***
Will always make 'em smile;
*A little bit of **courtesy***
Will bring 'em in a mile;
*A little bit of **friendliness***
Will tickle 'em 'tis plain—
*But a little bit of **service***
Will bring 'em back again.

This reprint was prepared by Macomb Community College. Additional copies are available by writing Catherine B. Ahles, Director of College Relations, Macomb Community College, 14500 Twelve Mile Road, Warren, MI 48093.

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